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A hybrid Ring-necked Pheasant x domestic fowl

by James Harrison

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Hybridisation between *Phasianus colchicus* L. and the domestic fowl have been recorded on many occasions; such cases can, in fact, be regarded as commonplace. The sporting journals and country magazines have often a brief note of such and quite frequently the account is illustrated by a photograph.

The present instance of this hybrid relates to two hens belonging to Mrs. Haggie of Thirsk, Yorkshire, which were visited by a stray cock pheasant, and the actual act of mating was observed.

The two hens, both birds of the year and 'first layers' were, it is believed, a mixed strain of Rhode Island Red and Light Sussex; they can be regarded as healthy young stock and reproductively active. This latter point is of importance in that it is a reasonable assumption that both hens would at least have had a normal average fertility and the progeny, all things being equal, a normal average capacity to survive.

It is, of course, well known that in intergeneric hybridisation both fertility and the survival rate of the progeny are quite often seriously affected. These points are well illustrated by the present case; the two hens concerned produced between them 40 eggs, and of these only 13 hatched, although one must set against this overall statement the fact that of the third setting of 12 eggs, none hatched owing to broody trouble, but at the same time it is believed that all the eggs were infertile. On the morbidity side there is the hard fact that of the 13 that did hatch, only three survived into their first year plumage.

The survivors comprised two cocks and one hen, and the fate of these was as follows:— one male escaped, the second died of coccidiosis (*fide* Mr. D. V. Sinclair, M.R.C.V.S.) while the hen, the subject of this communication, succumbed to a widespread fatty degeneration.

The two cocks, so I am informed by Mr. Sinclair (*in litt.* 19th March, 1968) were identical in type; neither of course had lived long enough to assume the full first winter dress. What the overall incidence of this particular cross is it is difficult even to hazard a guess, and whether it is fertile in either direction is again perhaps unknown. When one remembers that the domestic fowl is kept, one would imagine, by every gamekeeper in the country and that keepers' cottages are invariably located on the game reserve one can only be somewhat surprised that the hybrid is not even more numerous than it is known to be.

The male hybrid was a large bird, certainly larger than the average cock pheasant, and its stance was perhaps nearer to that of a domestic fowl than a pheasant, while the form and carriage of the tail was also much more that of a fowl than a pheasant, being shorter and fanned out.

The heavier build is also apparent in the skin (Fig.) during the preparation of which heavy deposits of fat were found over the abdomen, on the thighs and rump, and at the root of the neck. These are in fact the usual areas in any bird where depot fat is found. Although heavy, the fat deposition was not quite as gross as it is in sterile intersexes in pheasants, but it is perhaps not without some significance that the colour of this bird was in effect, a very similar shade of buffy-yellow, so often found in the 'cocky hen' pheasant.

The comparative weights are indicative of the degree of change shown by the hybrid towards the domestic fowl:—

Photograph by Dr. Pamela Harrison

Hybrid pheasant x domestic fowl, ♀ 1st year, showing 'twisted feather' mutation.

Hybrid: 2213 g.; *hen pheasant:* 1021 g. (average).

It should be noted that although the specimen is a female there was nevertheless a red field of bare, or almost bare skin around each eye, suggesting that there was some disturbance of the accepted pattern of the secondary sexual characters towards the intersexual state. The heavier build of this bird is also very apparent in the size of the tarsi and toes, which incidentally were grey as in the pheasant, and in the somewhat heavier bill.

One cannot but wonder whether this bird, had it survived into the autumn to assume its full, first winter plumage might not have shown more decisive signs of intersexuality, particularly as, even at this stage, it did show some tendencies towards maleness.

The general colour has already been described as buffy, in fact it was not dissimilar, broadly speaking, to the Buff Orpington breed of fowl. Colour matching in Maerz and Paul, *Dictionary of Color* it is ventrally nearest to Titian Gold, (Plate 13, no. 11) in its brightest areas on the breast, while over the belly it is much paler. Dorsally the ground colour is much the same, brightest on the shoulders and upper tail-coverts. The markings from the crown to the rump are pretty typically pheasant, consisting of arches, which are somewhat elongated, notches and arrowheads in dark sepia. These characters are shown in the photograph.

Mention must be made of a very interesting feature shown by some of

the feathers (see Fig.) two of which are shown isolated from the skin and consist of torsion amounting to as much as 360° round the long axis of the quill. This can be seen in the tail feathers *in situ*, and in the broken tail feather shown separately, as well as in a body feather; the effect is that of having in view at one and the same time both the dorsal and ventral surfaces of the feather so affected.

It has been shown by Huxley and Bond (1934) that in a gynandromorphic pheasant the growth rate of the male and female half of such a tail feather differs. The effect of this is that the feather is forced to bend laterally during growth along its long axis with the result that the tips diverge outwards from the mid-line of the tail, demonstrating that there exists a sex growth rate differential.

One can postulate in the present case the operation of a species growth rate differential, and that this is so marked that in the process of growth the feather has no choice other than that of making a series of spiral rotations amounting to 360° around the long access of the quill.

It may well be questioned as to why every feather is not similarly affected. In this connection it must be remembered that growth is under the control of hormones, and that the elaboration of these is not necessarily even and uninterrupted. Harrison (1932) in a study of a series of 19 hen pheasants assuming male plumage has indicated that the condition may be phasic, and that it can occur even in quite young, and as yet, not even fully grown poults.

Discussion:

Intergeneric hybrids are invariably of much interest in that, in addition to the usual intermediate characters which are so often found, other characters may become evident the significance of which is not always apparent. Indeed the characters found are not invariably intermediate, as in the present case where *e.g.* the size inclines far more to one parent than the other.

Hybridisation can also affect normal function very adversely as we have already seen, and in this respect anything but beneficial effects upon the recipient of the mixing of the genes takes place, and yet, as we know, speciation can sometimes be brought about by hybridisation.

The interesting 'twisted' feather mutation has already been fully discussed, but there are still one or two noteworthy points exhibited by this specimen. One of these is the general colour of the bird. This pale buffy colour is one which I have already mentioned as that seen commonly in the so-called 'mule' pheasant, an intersexual state arising from failure of the ovarian secretion from one cause or another. In the case of the present specimen it must, of course, still be regarded as immature, *i.e.* not reproductively active, a view fully substantiated by the histology of the ovary. I believe that had it lived longer the ovary would, in all probability, not have developed into a functional organ, and that this bird would have become an intersex. The normal balance of the endocrine system is a very delicate one, and is easily disturbed in the process of hybridisation. The probability that this disturbance of hormone function was operative in this case is strongly suggested by the presence of the bare red skin round each eye which this bird showed, for this as is well known, is a male character of the covert pheasant.

SUMMARY

An intergeneric hybrid between a male Ring-necked Pheasant and a domestic fowl is described.

The occurrence of an associated mutation is described, and discussed in the light of the hormone control of growth and the resulting disturbance hybridisation has occasioned.

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My principal indebtedness is to Mrs. Haggie who was kind enough to send me the specimen, to Mrs. Carl Seton-Browne who advised me in the first place of the existence of the hybrid family, and to Mr. D. V. Sinclair, for much useful information.

Dr. W. G. Storey very kindly prepared and reported upon the histological material, which included the vital slide confirming the anatomical sex of the bird as a female, and for slides of other organs which determined its death from the widespread fatty degeneration.

My thanks are also due to Dr. Pamela Harrison for the photograph of the prepared skin. Discussion with and comments by Dr. Jeffery Harrison are again acknowledged with gratitude.

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The status of *Monticola pretoriae* Gunning and Roberts, 1911

by P. A. CLANCEY

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Monticola pretoriae Gunning and Roberts, 1911: Pretoria, Transvaal was proposed as specifically distinct from *Monticola brevipes* (Waterhouse), 1838: 'Tans Mt., near Walvis Bay, South-West Africa, in having the top of the head uniform slate-blue, with no white eyebrow, and the outer edge of the outermost rectrix with a more extensive brown mark. Until very recently, *pretoriae* has received little or no support from other workers. Roberts himself (1940), placed it as a synonym of *M. b. leucocapilla* (Lafresnaye), 1852: no locality, following Bangs (1930), which view was adopted by Vincent (1952) and Clancey (1966); Ripley (1964), on the other hand, placed it in the synonymy of *M. b. brevipes*. Other recent authors, including McLachlan and Liversidge (1957), Mackworth-Praed and Grant (1963), *inter al.*, have denied the existence of subspecifically significant variation in the Short-toed Rock-thrush. Very recently, Farkas (1966) resuscitated *pretoriae* as a form specifically discrete from *M. brevipes*, in so doing considering Lafresnaye's *leucocapilla* a synonym of *brevipes* and not an earlier name for *pretoriae*. In treating *pretoriae* as a full species, Farkas has already been followed by White (1967) and other workers. As it is clear that the *pretoriae* of Farkas is simply the *leucocapilla* of Bangs, Roberts (1940), Clancey and Ripley, I have gone into this question afresh with the pooled specimen resources of both the Transvaal and Durban Museums in an endeavour to ascertain its true status.

At the outset it may be stated that *M. pretoriae* is simply a well-marked